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WATER SUPPLY OUTLOOK FOR WASHINGTON

Prepared by

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, U.S. Geological Survey, National Park Service, and other Federal, State and Private organizations.

AS OF
APR. 1, 1972

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO NUMBER ORC 221-3

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.



Released by

ORLO W. KRAUTER

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

JOHN A. BIGGS

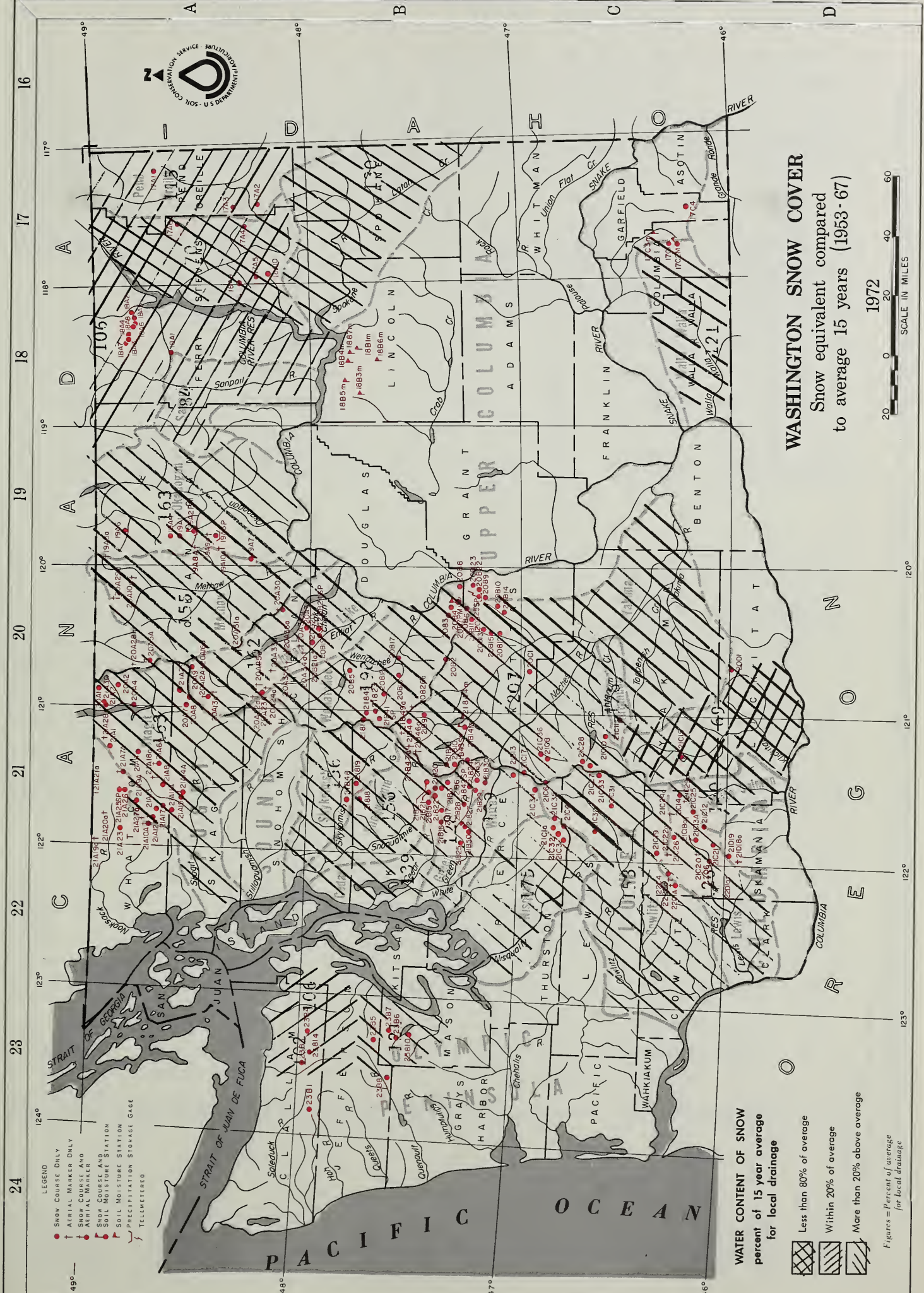
DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON



Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor

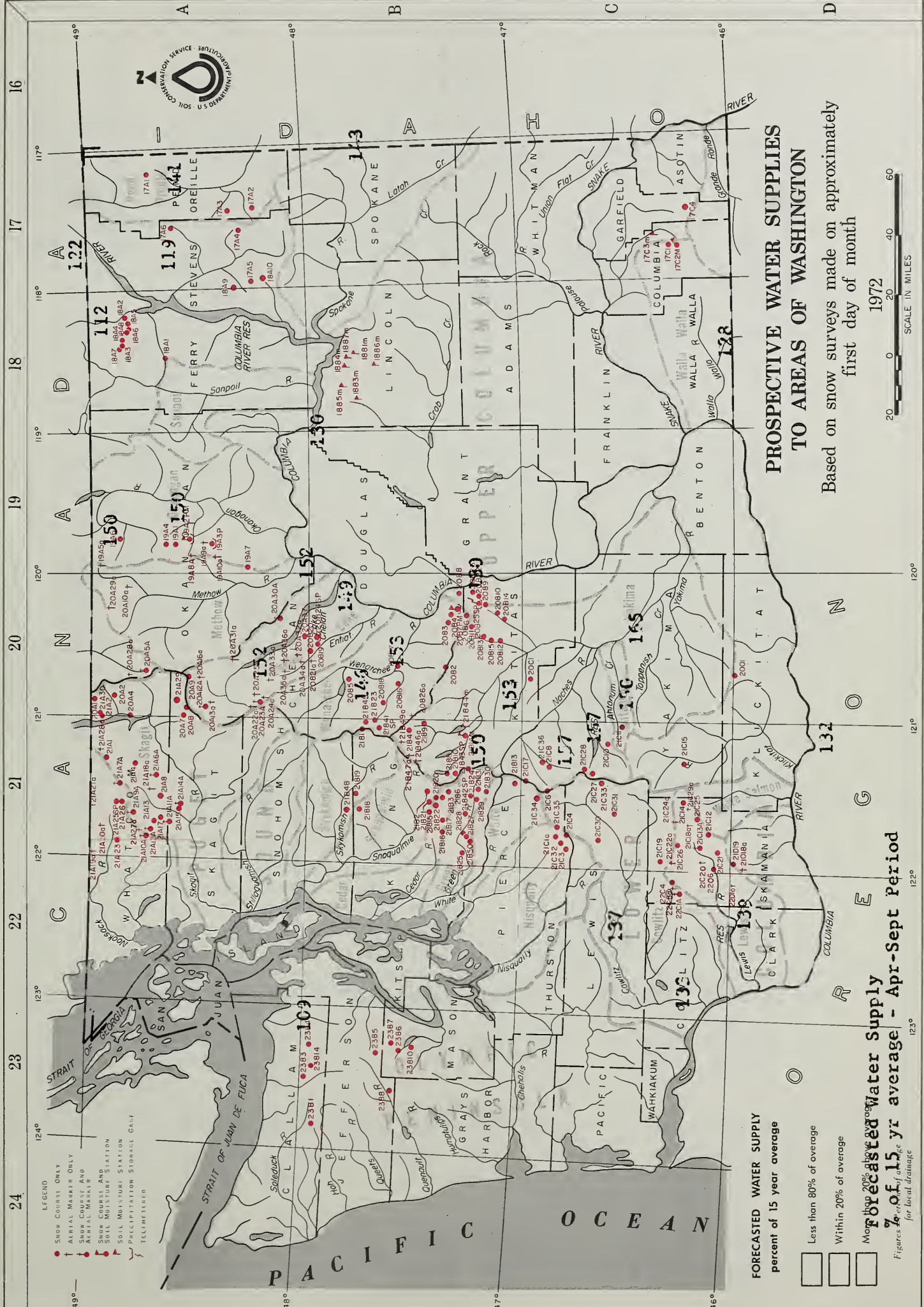
SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A4	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A9	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chowchilla	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4950
Togo	18A10	6	29N	38E	3370
Sonpail River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A21P	33	37N	23E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5A	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A23a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	18	34N	16E	2220
Park Creek Ridge	20A12a	7	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4800
Entiat River Trail	20A34a	2	29N	17E	3150
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	18E	4300
Pope Ridge	20B24SP	22	29N	18E	4300
Pugh Ridge	20A32a	34	30N	18E	6400
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3850
Tommy Creek	20B21a	10	28N	18E	5300
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	2925
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2	35	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310
Lewis River (continued)					
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25	28	8N	9E	3500
Lone Pine Shelter	21C26	24	8N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6	36	8N	6E	2000
Oldman Pass	21D19	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20a	16	8N	7E	3400
Surprise Lakes	21C13a	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Onanapocosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33	11	13N	11E	5900
Potato Hill	21C14	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250
PUGET SOUND DRAINAGE					
Nisqually River					
Ghost Forest	21C4	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	5050
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21B13	30	18N	11E	6000
White River Campground	21C34	4	16N	9E	
Green River					
Airstrip	21B24	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	21	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21B10	25	21N	11E	3000
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21	30	22N	10E	3500
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Oiallie Meadows	21B2	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900
Skykomish River					
Lake Elizabeth	21B19	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	26	40N	12E	3680
Brown Top	21A28a	34	38N	16E	6000
Devils Park	20A4	14	40N	14E	5900
Freezeout Creek Trail	20A2	14	40N	16E	5000
Freezeout Meadows	20A2	25	36N	16E	3500
Granite Creek	21A29	19	40N	14E	2600
Lake Hozomeen	21A2	29	36N	14E	1900
Meadows Cabins	21A30	19	40N	14E	2800
New Hozomeen Lake	20A7	15	35N	14E	4200
Thunder Basin	20A7	15	35N	14E	4200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11a	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Komo Kulshan	21A17	31	37N	9E	800
Mount Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12a	20	37N	8E	2100
Schreibers Meadow	21A10a	18	37N	8E	3400
S. F. Thunder Creek	21A14a	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20a	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	29	28N	6W	
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skokomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	25N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900
Solleduck River					
Deer Lake	23B1	14	28N	9W	3900

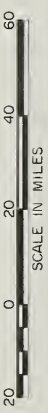
LEGEND
 21A7 SNOW COURSE ONLY
 21A8 SNOW COURSE AND AERIAL MARKER
 21A9 SNOW COURSE AND SOIL MOISTURE STATION
 21A10 SNOW COURSE AND SOIL MOISTURE STATION
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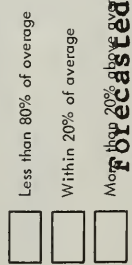
PROSPECTIVE WATER SUPPLIES TO AREAS OF WASHINGTON

Based on snow surveys made on approximately
first day of month

1972



FORECASTED WATER SUPPLY
percent of 15 year average



Forecasted Water Supply
% of 15 yr average - Apr-Sept Period

Figures for local drainage

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	
UPPER COLUMBIA DRAINAGE																		
Pend Oreille River																		
Boyer Mountain	17A2	7	31N	43E	5250	Colockum Creek Upper	20B22	11	20N	20E	5300	Lewis River (continued)	21C29a	21	9N	10E	5600	
Bunchgrass Meadow	17A1	24	37N	44E	5000	Colockum Creek Lower	20B23	1	20N	20E	4300	Divide Meadow	21C29b	28	BN	9E	3500	
Winchester Creek	17A3	30	33N	43E	2970	Squillchuck Creek	20B24	18	21N	20E	3400	Grand Meadow	21C29c	28	BN	9E	3500	
Kettle River																		
Boulder Road	18A2	36	39N	36E	1450	Beehive Springs	20B3	12	21N	19E	4400	Lone Pine Shelter	21C26	8	9N	7E	3800	
Butte Creek	18A3	28	39N	35E	4070	Scout-A-Vista	20B4	18	21N	20E	3400	Marble Mountain	22C5a	24	BN	5E	3200	
Cabin Creek	18A8	5	38N	36E	3170	Stemilt Creek	20B8	34	21N	20E	4450	Freezeout Creek Trail	20A1	14	40N	14E	3500	
Goat Creek	18A4	26	39N	35E	3595	Jump-Off	20B6	30	21N	20E	5000	Freezeout Meadows	20A2	8	40N	16E	5000	
Snow Caps Creek	18A5	5	38N	36E	2150	Stemilt Slide	20B7PM	30	21N	20E	4400	Granite Creek	21A29	25	36N	16E	3500	
Snow Caps Trail	18A6	5	38N	36E	2720	Upper Wheeler	20B7PM	30	21N	20E	4400	Lake Ilwacoem	21A2	19	40N	14E	2600	
Summit G. S.	18A7	20	39N	35E	4600	Crab Creek	18B1m	32	27N	34E	2440	Meadows Cabins	20A8	29	36N	14E	1900	
Colville River																		
Baird	17A6	19	36N	42E	3215	Jack Woods	18B3m	28	27N	31E	2750	Thunder Basin	21A30	19	40N	14E	2800	
Carlson	18A9	34	32N	38E	2885	Krause	18B4m	21	27N	33E	2420	20A7	15	35N	14E	4200		
Chewah	18A9	34	32N	38E	2885	Sheffels	18B5m	17	27N	32E	2378	Baker River						
Stranger Mountain	17A4	11	32N	41E	4925	Wheatridge	18B6m	24	25N	32E	2290	Baker Pass	21A27a	1	37N	7E	4900	
Togo	17A5	26	31N	38E	4990	Yakima River	Ahtanum R. S.	21C11	26	12N	14E	3100	Dock Butte	21A11a	8	36N	8E	3800
18A10	6	29N	38E	3370	Big Boulder Creek	21B9	35	23N	14E	3200	Easy Pass	21A17a	19	35N	11E	5200		
Sanpoil River																		
Sherman Creek Pass	18A1	19	36N	35E	5350	Bumping Lake	21C8	23	16N	12E	3450	Jasper Pass	21A6a	17	38N	11E	5400	
Okanogan River																		
Clark	19A8a	2	36N	23E	7000	Bumping Lake New	21C36	13	16N	12E	3400	Komo Kulshan	21A17	31	37N	9E	800	
Muckamuck	19A9a	20	36N	24E	6750	Colockum Pass	20B9	25	20N	20E	5370	Marten Lake	21A9a	23	38N	8E	3600	
Nutton Creek No. 1	19A1	30	37N	24E	5700	Cooke Creek	20B10	17	19N	20E	4125	Mount Blum	21A18a	27	38N	10E	5800	
Nutton Creek No. 2	19A4	19	37N	24E	6000	Domery Flat	21B4m	15	20N	14E	2200	Schreibers Meadow	21A12a	20	37N	8E	2100	
Paysayten	20A28a	32	40N	18E	4300	Fish Lake	21B4	34	24N	14E	3371	S. F. Thunders Creek	21A10a	18	37N	8E	3400	
Rusty Creek	19A3PM	18	35N	24E	4000	Green Lake	21C10	3	12N	13E	6000	Sulphur Creek	21A14a	20	36N	9E	2200	
Salmon Meadows	19A3PM	33	37N	24E	4500	Grouse Camp	20B11	29	21N	19E	5385	Three Mile Creek	21A15	18	36N	9E	1600	
Starvation Mtn.	19A10a	15	35N	23E	6750	High Creek	20B12	34	20N	19E	2930	Watson Lakes	21A18	25	37N	9E	4500	
Touts Coulee	19A6	30	39N	25E	2845	Joe Lake	21B46a	22	23N	12E	4624	Nooksack River						
Methow River																		
Billy Goat Pass	20A10a	10	38N	20E	6400	Lake Cle Elum	21B4m	15	20N	14E	2200	Bald Mountain	21A19a	7	40N	7E	4400	
Dollar Hatch	20A29a	8	39N	20E	7000	Lemah Creek	21B47a	7	23N	13E	3327	Canyon	21A20a	20	40N	8E	5100	
Harris Pass	20A5a	7	37N	18E	6500	Manastash	20C1	24	17N	16E	3935	Glacier Creek	21A23	9-10	38N	7E	3700	
Horseshoe Basin	19A5a	15	40N	23E	7000	Morse Lake	21C17	6	16N	11E	5400	Panorama New	21A26	17	39N	9E	4300	
Loup Loop	19A7	36	34N	23E	4650	Nanum	20B13	4	20N	19E	3875	Panorama Snow Pillow	21A25SP	17	39N	9E	4300	
Chelan Lake Basin																		
Cloudy Pass	20A22a	12	31N	15E	6500	Trail Creek	20B14	20	19N	20E	3360	Twin Lakes	21A21a	16	40N	9E	5200	
Greenwood Flat	20A25a	3	31N	16E	3540	Tunnel Avenue	21B8	13	21N	11E	4500	OLYMPIC PENINSULA						
Little Meadows	20A21a	8	31N	16E	5275	Van Epps Pass	20B26a	16	23N	15E	5925	Dungeness River	23B4	1	28N	5W	5200	
Lyman Lake	20A23a	18	31N	16E	5900	Walters Flat	20B15	22	20N	19E	3360	Deer Park	Morse Creek					
Park Creek Flat	20A13a	18	34N	16E	2220	Waputis Lake	21B49a	12	23N	13E	3024	Cox Valley	23B14	29	28N	6W		
Park Creek Ridge	20A12a	7	34N	16E	4600	White Pass (East Side)	21C2B	2	13N	11E	4500	Hurricane	23B3	36	29N	7W	4500	
Petersons	20A16a	3	34N	17E	3730	White Pass (Leach Lake)	21C27	1	13N	11E	4500	Skokomish River						
Rainy Pass	20A9	21	35N	17E	4780	LOWER COLUMBIA DRAINAGE												
Safety Harbor	20A30a	32	31N	20E	6300	Asotin Creek												
War Creek Pass	20A31a	34	33N	18E	6500	Spruce Springs	17C4	9	BN	40E	5700	Cedar River	21B3	10	21N	10E	2390	
Entiat River																		
Brief	20B19	34	28N	19E	1600	Mill Creek												
Entiat Meadows	20A33a	28	31N	17E	4800	Coase	17C3m	2	9N	35E	3370	City Cabin	21B21	30	22N	10E	3300	
Entiat River Trail	20A34a	2	29N	17E	3150	Homestead	17C1	11	9N	40E	4030	Mt. Gardner	21B22	31	22N	10E	2500	
Fox Camp	20A36a	17	30N	18E	6510	Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400	Mt. Lindsay	21B16	31	22N	9E	2500	
Pope Ridge	20B20	22	29N	18E	4300	Klickitat River												
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	4300	Satus Pass	20D1	21	6N	17E	4030	Rex River	21B17	11	21N	9E	2400	
Pugh Ridge	20A32a	34	30N	18E	6400	West Fork Cabin	21C15	23	9N	12E	3000	South Fork Cedar	21B6	24	21N	10E	3000	
Shady Pass	20A37	20	29N	19E	6200	White Salmon River												
Snow Brushy	20A35a	21	30N	17E	3850	Cultus Creek	21C12	35	7N	BE	4000	Alpine Meadow	21B4B	31	27N	9E	3500	
Tommy Creek	20B21a	10	28N	18E	5300	Lewis River												
Wenatchee River																		
Berne-Mill Creek	21B23	7	26N	15E	2925	Blue Lake	21C22a	19	9N	BE	4800	South Fork Toit	21B1B	26	26N	9E	1900	
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240	Bob's Trail	21C21	25	8N	7E	2200	Snoqualmie River	21B4B	31	27N	9E	3500	
Blewett Pass No. 2	20B2	35	22N	17E	4270	Calamity Ridge	22D1a	8	5N	5E	2500	21B1B	26	26N	9E	1900		
Chiwaikum G. S.	20B16	4	25N	17E	1810	Council Pass	21C1Ba	24	9N	9E	4200	Skykomish River	21B19	33	26N	10E	2900	
Lake Wenatchee	20B5	33	27N	17E	1970	LEGEND												
Leavenworth R. S.	20B17	1	24N	17E	1127	NUMBERING SYSTEM EXAMPLE												
Merritt	20B18	4	26N	16E	2140	21A7 SNOW COURSE ONLY												
Stevens Pass	21B1	14	26N	13E	4070	21A7A AERIAL MARKER ONLY												
Stevens Pass Sand Shed	21B45	12	26N	19E	3700	21A7B SNOW COURSE AND AERIAL MARKER												
Trough #2	20B25SP	10	20N	20E	5310	21A7M SNOW COURSE AND SOIL MOISTURE STATION												
						21A7P SNOW COURSE AND PARTICIPATION STORAGE GAGE												
						21A7SP SNOW PILLOW												

WATER SUPPLY OUTLOOK

State of Washington
April 1, 1972

* As was reported last month the water supply outlook for the State *
* of Washington and tributary streams continues to be excellent and *
* the record and/or near record forecasts made last month are fun- *
* damentally the same. There have been increases in some forecasts *
* where the larger portion of the water comes from high elevations *
* and there have been decreases in others where the watershed ele- *
* vation is lower. A great deal of the snowpack that occurred at *
* the lower elevations has run off and resulted in well above-normal *
* streamflows during the month of March. Along the main stem the *
* forecast should be increased due to the 6% increase forecasted *
* for the Columbia River at Birchbank. This, undoubtedly, will be *
* reflected along the stem and will result in higher flows than *
* previously anticipated at The Dalles. Temperatures were general- *
* ly warmer than normal over the basin which further consolidated *
* the heavy, dense snowpack. This, in connection with the general- *
* ly above-normal precipitation is the cause of both the increase *
* in forecasted amounts as well as the high flows. The snow cover *
* now ranges from a low of 30% below normal in the northeast to a *
* high of 107% above normal in the Yakima watershed. As we stated *
* last month, this low-elevation snowpack has a tendency to flash *
* off early causing local damage and as you can see this has occur- *
* red. If the weather patterns remain as they are now, with the *
* above-normal precipitation and temperatures, the high flows that *
* are now being experienced should continue but to a lesser degree *
* for the remainder of the runoff period. *

*
* The winter precipitation was above normal over the entire state *
* with the exception of the northeastern portion. The spring pre- *
* cipitation, as stated above, continues this above-normal regime *
* with again the northeastern portion reporting below-normal rain- *
* fall. *

*
* Reservoir storage again has little meaning as reservoir managers *
* are attempting to lower their reservoirs to contain the expected *
* high flows but with little affect. The flows downstream from *
* these reservoirs continue to be maintained at flood stage but the *
* uncontrolled flows from tributary basins do not permit as fast a *
* drawdown as the flood management agencies would like to see. Flows *
* during the month were all well above normal, ranging as high as *
* 450% of normal. *

SNOW COVER

The Colville and Klickitat drainages again have the least amount of snow cover of any reported in the state. These watersheds are gaged

by low-elevation snow courses only. Other drainages in the northeast portion of the state have a snow cover that ranges from 16% below normal to 16% above. The snowpack in the Okanogan drainage, both the Canadian and United States portions, is 63% above normal. Along the east side of the Cascades the snowpack ranges from 50% above normal to the previously mentioned 107% above on the Yakima drainage. On the lower Columbia the higher elevation watersheds have a snow cover that ranges from 21% above normal to 53% above. The Puget Sound drainage snow cover ranges from 28% above to 75% above. On the Olympic Peninsula the snow cover is considerably less, ranging from 2% above on the Elwha to 21% above for the Skokomish.

RESERVOIRS

With the exception of Franklin D. Roosevelt reservoir all the rest have more water in storage than normal for this time of year. Again, as stated above, these reservoirs are filling faster than the flood control agencies would like to see but they cannot be lowered due to high flows occurring below the reservoirs.

PRECIPITATION

During the month of March the National Weather Service reported precipitation to be well above normal over the entire Columbia Basin with the exception of the northeastern part of Washington.

STREAMFLOW

All streams in the State of Washington are flowing at a much higher percentage than normal for this time of year. This is the result of the above mentioned above-normal precipitation and temperatures. The low-elevation snowpack is pretty well gone and the middle elevation going fast. This, together with the rain, is accounting for these high flows. The forecasted streamflows range from 9% above normal on the Olympic Peninsula to a high of nearly 70% above on the Yakima. Many of these forecasted flows are for record amounts. Numerical forecasts can be found elsewhere in this report.

STREAMFLOW FORECASTS - APRIL 1972

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviation from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1971 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1972	% 15-Yr. Avg.	Seasonal Streamflow in Thousands of Acre-Feet				
			Fore- cast Period	1971	1970	1969	15-Yr Average 1953-67
<u>COLUMBIA BASIN</u>							
<u>Columbia River System</u>							
Columbia River at Birchbank <u>1/</u>	56410	122	Apr-Sep	48592	34553	48001	46368
	46500	124	Apr-Jul	39462	27931	40567	37480
	34100	126	Apr-Jun	29759	20952	32193	27040
Columbia River at Grand Coulee <u>1/</u>	90000	130	Apr-Sep	75360	54617	74617	69458
	78000	132	Apr-Jul	64444	46563	65587	58899
	61000	133	Apr-Jun	51550	37574	54513	45889
Columbia River bl. Rock Island Dam <u>1/</u>	99000	130	Apr-Sep	84965	58544	79675	76241
	84900	131	Apr-Jul	73096	50236	70515	64777
	66000	131	Apr-Jun	58245	40675	58851	50387
Columbia River at The Dalles, OR <u>1/</u>	139000	132	Apr-Sep	123427	88146	112281	105176
	120000	133	Apr-Jul	107702	76054	100113	90050
	97800	135	Apr-Jun	88936	62847	85657	72410
<u>Pend Oreille River System</u>							
Pend Oreille River bl. Box Canyon	22600	141	Apr-Sep		14737	16166	16030
	21000	142	Apr-Jul		13676	15055	14788
	18200	143	Apr-Jun		11985	13033	12754
<u>Kettle River System</u>							
Kettle River nr. Laurier	2150	112	Apr-Sep	2240	1099	2239	1918
	2080	114	Apr-Jul	2177	1068	2188	1821
	1910	116	Apr-Jun	1927	1004	2048	1644

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Streamflow Forecasts - April 1972 (Cont.)

Streamflow Forecast			Seasonal Streamflow in Thousands of Acre-Feet				
Basin, Stream and Station	Forecast Runoff 1972	% 15-Yr. Avg.	Fore- cast Period	1971	1970	1969	15-Yr. Average 1953-67
<u>Kettle River System, (Cont.)</u>							
Colville River							
at Kettle Falls	183	119	Apr-Sep		94	270	153
	169	120	Apr-Jul		86	256	141
	157	120	Apr-Jun		80	240	131
<u>Spokane River System*</u>							
Spokane River							
at Post Falls ID <u>2/</u>	4500	143	Apr-Sep			3552	3151
	4390	144	Apr-Jul			3463	3055
	4190	144	Apr-Jun			3350	2913
<u>Okanogan River System**</u>							
Similkameen River							
nr. Nighthawk	2290	150	Apr-Sep	1924	850	1199	1525
	2130	150	Apr-Jul	1827	808	1150	1419
	1820	152	Apr-Jun	1552	739	1052	1197
Okanogan River							
nr. Tonasket	2610	150	Apr-Sep	2236	923	1448	1738
	2370	150	Apr-Jul	2080	864	1353	1578
	1960	149	Apr-Jun	1769	785	1231	1318
<u>Methow River System**</u>							
Methow River							
nr. Pateros	1600	152	Apr-Sep		622	1060	1054
	1500	153	Apr-Jul		587	1013	981
	1310	157	Apr-Jun		532	948	834
<u>Chelan River System</u>							
Chelan River							
at Chelan <u>3/</u>	1890	149	Apr-Sep	1550	905	1337	1266
	1680	150	Apr-Jul	1352	816	1230	1119
	1320	152	Apr-Jun	1019	683	1093	870
Stehekin River							
at Stehekin	1380	152	Apr-Sep		678	961	904
	1180	153	Apr-Jul		589	853	772
	897	153	Apr-Jun		478	748	586
Entiat nr.							
Ardenvoir	292	--	Apr-Sep		160	265	--
	271	--	Apr-Jul		148	249	--
	224	--	Apr-Jun		129	227	--

* Forecasts made by J. Alden Wilson, Soil Conservation Service, Boise, Idaho.

** These forecasts are based in part upon base flow data especially prepared and furnished for this purpose by the U. S. Geological Survey.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Streamflow Forecasts - April 1972 (Cont.)

Basin, Stream and Station	Forecast Runoff 1972	% 15-Yr. Avg.	Fore- cast Period	Seasonal Streamflow in Thousands of Acre-Feet			15-Yr. Average 1953-67
				1971	1970	1969	
Wenatchee River System							
Wenatchee River							
at Plain	1940	146	Apr-Sep		1019	1443	1333
	1770	147	Apr-Jul		941	1349	1204
	1400	147	Apr-Jun		804	1217	952
Wenatchee River							
at Peshastin	2780	153	Apr-Sep		1416	1953	1814
	2530	153	Apr-Jul		1318	1840	1651
	2030	154	Apr-Jun		1132	1669	1316
Stemilt Basin							
nr. Wenatchee	162*	--	May-Sep			145*	
Yakima River System							
Yakima River							
nr. Martin <u>4/</u>	218	150	Apr-Sep	195	131	156	145
	202	151	Apr-Jul	182	123	144	134
	176	152	Apr-Jun	142	114	136	116
Yakima River							
at Cle Elum <u>5/</u>	1480	153	Apr-Sep		866	1051	968
	1360	154	Apr-Jul		803	977	885
	1190	156	Apr-Jun		723	912	762
Yakima River							
nr. Parker <u>6/</u>	2870	165	Apr-Sep		1491	1989	1738
	2840	165	Apr-Jul		1512	2005	1722
	2580	163	Apr-Jun		1461	1980	1583
Kachess River							
nr. Easton <u>7/</u>	201	157	Apr-Sep	173	115	139	128
	193	158	Apr-Jul	164	112	134	122
	169	158	Apr-Jun	131	104	128	107
Cle Elum River							
nr. Roslyn <u>8/</u>	742	153	Apr-Sep	626	435	496	485
	685	154	Apr-Jul	567	402	473	445
	574	154	Apr-Jun	433	350	440	373
Bumping River							
nr. Nile <u>9/</u>	236	157	Apr-Sep	187	129	150	150
	218	158	Apr-Jul	168	122	142	138
	181	159	Apr-Jun	118	107	133	114

* Thousands of Miners' inches.

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

Streamflow Forecasts - April 1972 (Cont.)

Basin, Stream and Station	Forecast Runoff 1972	%	Seasonal Streamflow in Thousands of Acre-Feet			
			Fore- cast Period	1971	1970	15-Yr. Average 1953-67

Yakima River System (Cont.)

American River nr. Nile	202	157	Apr-Sep		128	138	129
	188	157	Apr-Jul		120	130	120
	156	158	Apr-Jun		106	120	99
Tieton River at Tieton Dam <u>10/</u>	394	157	Apr-Sep	323	244	273	251
	346	161	Apr-Jul	268	207	244	215
	281	163	Apr-Jun	197	172	220	172
Naches River nr. Naches <u>11/</u>	1440	160	Apr-Sep		841	994	899
	1330	162	Apr-Jul		779	926	819
	1140	163	Apr-Jun		694	857	698
Ahtanum Creeks nr. Tampico <u>12/</u>	74	150	Apr-Sep		43	57	49
	68	152	Apr-Jul		39	53	45
	62	154	Apr-Jun		35	49	40

Lower Columbia River System

Mill Creek nr. Walla Walla	37	128	Apr-Sep		27	32	29
	32	128	Apr-Jul		23	29	25
	30	130	Apr-Jun		21	27	23
Lewis River at Ariel <u>13/</u>	1890	139	Apr-Sep		914	1613	1358
	1720	144	Apr-Jul		798	1431	1197
	1520	144	Apr-Jun		723	1303	1059
Cowlitz River bl. Mayfield Dam	2960	137	Apr-Sep		1615	2230	2160
	2630	138	Apr-Jul		1425	2002	1908
	2180	135	Apr-Jun		1245	1802	1612
Cowlitz River at Castle Rock <u>14/</u>	3750	133	Apr-Sep		2134	2965	2818
	3370	136	Apr-Jul		1873	2641	2487
	2820	133	Apr-Jun		1652	2359	2119

OLYMPIC PENINSULA

Dungeness River System

Dungeness River nr. Sequim	187	109	Apr-Sep		136	195	172
	155	110	Apr-Jul		115	167	141
	117	111	Apr-Jun		89	139	105

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.

12/ Observed flow of North and South Forks (combined).

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.

14/ Observed flow corrected for storage in Mayfield Reservoir.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1972, as per cent of the same date in 1971 and 1970 and average of record.

Tributary Basin	No. of Courses Average	Years of Record	1972 Snow Water Expressed as per cent of 1971	1970	1953-67
<u>UPPER COLUMBIA BASIN</u>					
Pend Oreille	14 - 17	8 - 35	94	125	115*
Kettle	12	9 - 34	83	139	106*
Colville	3	13	49	76	70*
Spokane	16	8 - 35	106	145	130*
Sanpoil	1	33	81	95	84
Okanogan	32 - 35	7 - 37	112	180	163*
Methow	8	11 - 30	110	160	155*
Chelan	4	11 - 40	114	218	162*
Entiat	8 - 9	5 - 7	102	185	150*
Wenatchee	8 - 10	11 - 40	107	192	190*
Yakima	22 - 23	6 - 52	102	202	207*
Ahtanum	1 - 2	23	42	98	126*
<u>LOWER COLUMBIA</u>					
Mill Creek	3	7 - 22	102	171	121*
Klickitat	1	15	42	84	69*
White Salmon	2	28	90	182	140*
Lewis	14 - 18	11 - 28	70	267	126*
Cowlitz	10	9 - 32	96	504	153*
<u>PUGET SOUND</u>					
Nisqually	3 - 4	7 - 22	104	204	175*
White	3	16 - 32	94	173	139*
Green	5 - 10	11 - 26	88	206	128*
Cedar	5 - 6	10 - 11	89	339	139*
Snoqualmie	2 - 3	4 - 26	89	193	156*
Skykomish	2 - 3	14 - 25	98	200	156*
Skagit	13 - 16	21 - 40	105	483	163*
Baker	7 - 11	3 - 14	83	223	136*
<u>OLYMPIC PENINSULA</u>					
Skokomish	3 - 4	8 - 22	73	201	121*
Elwha	1	22	75	199	102
Dungeness	1	22	81	155	106*

* Records of less than 15 years used on computation of averages

RESERVOIR STORAGE - 1000 Acre Feet

BASIN or STREAM	RESERVOIR	USABLE <u>1/</u> CAPACITY	1972	Measured April		Normal*
				1971	1970	
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	335.2	137.9	133.8	164.0
Columbia	Franklin D. Roosevelt Lake	5232.0	1242.4	1534.2	2111.5	2359.6
Columbia	Banks Lake	761.8	680.2	674.8	698.9	499.3
Okanogan	Conconully Reservoir	13.0	10.8	6.1	8.0	6.7
Okanogan	Salmon Lake	10.5	8.6	2.1	7.4	8.5
Chelan	Lake Chelan	676.1	199.5	179.9	22.0	169.0
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	127.5	122.4	76.0	102.8
Kachess	Kachess Lake	239.0	215.3	190.7	181.5	184.4
Cle Elum	Lake Cle Elum	436.9	326.9	251.8	199.5	278.8
Bumping	Bumping Lake	33.7	9.1	3.3	7.2	14.0
Tieton	Rimrock Lake	198.0	145.1	139.6	110.1	135.8
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1202.9	833.0	757.2	568.5	715.2
Skagit	Diablo Reservoir	90.6	87.8	84.3	96.6	85.5
Skagit	Gorge Reservoir	9.8	7.8	8.3	8.4	--

1/ Based on Active Storage

* 15-year average 1953-67



SOIL MOISTURE - April

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches):	Soil Moisture Content		
				Total : Capacity:	(Inches) as of Apr. 1		
					1972	1971	1970
<u>CRAB CREEK</u>							
Jack Woods	18B3m	2750	48	13.6	9.6	10.1	10.4
Krause	18B4m	2420	48	13.6	9.2	9.3	9.6
Sheffels	18B5m	2380	48	13.6	9.7	9.1	8.2
Sherman	18B7m	2440	48	13.6	9.0	8.9	8.2
Wheatridge	18B6m	2290	48	13.6	10.4	10.4	9.5
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	3.7	3.6	2.4
Trout Creek	3-M	3600	48	7.3	Late Report	2.9*	--
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	Not Measured	4.9	5.6
Lake Cle Elum	21B14M	2200	48	12.8	Not Measured	9.2	9.2
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	10.5	10.6	10.4
Helmers	17C2M	4400	48	12.0	10.6	11.0	11.2
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	12.4	10.1*	6.9

* March 1 measurement

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches):	Soil Moisture Content		
				Total : Capacity:	(Inches) as of Oct. 1		
					1971	1970	1969
<u>CRAB CREEK</u>							
Jack Woods	18B3m	2750	48	13.6	5.3	7.0	7.5
Krause	18B4m	2420	48	13.6	5.0	4.4	5.9
Sheffels	18B5m	2380	48	13.6	5.3	4.4	4.5
Sherman	18B7m	2440	48	13.6	4.0	3.8	4.2
Wheatridge	18B6m	2290	48	13.6	5.5	7.8	5.4
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	2.7	1.7	2.7
Trout Creek	3-M	3600	48	7.3	3.3	3.4*	3.8*
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	2.1	2.4	--
Lake Cle Elum	21B14M	2200	48	12.8	7.1	7.6	--
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	6.2	5.9	6.1
Helmers	17C2M	4400	48	12.0	8.2	7.3	7.1
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	6.5	5.1	9.8

* Nov 1 measurement

PRECIPITATION 1/

Division Averages and Departures

Drainage Divisions	FALL		WINTER	
	Sep - Oct	1971 <u>2/</u>	Nov - 1971 -	Mar 1972 <u>2/</u>
	Observed	Departure	Observed	Departure
Columbia in Canada	4.45	+ 0.56	18.14	+ 5.45
Pend Oreille - Spokane	4.63	+ 0.48	22.16	+ 3.91
Northeastern Washington	3.16	+ 0.91	9.92	- 1.17
Southeastern Washington	3.73	+ 1.08	15.47	+ 3.06
Central Washington	4.15	- 0.29	39.29	+12.16
North Central Washington	1.99	+ 0.58	10.09	+ 3.75
Northwest Slope Cascades	11.60	- 0.07	66.90	+14.76
Southwest Slope Cascades	9.33	+ 1.61	54.96	+14.09

Northeastern Washington	- Lower Spokane, Colville, Sanpoil and lower Kettle drainages.
Southeastern Washington	- Touchet, Tucannon and Palouse drainages.
Central Washington	- Yakima, Wenatchee and Chelan drainages.
North Central Washington	- Methow and Okanogan drainages.
Northwest Slope Cascades	- Puget Sound drainages.
Southwest Slope Cascades	- Lower Columbia drainages.

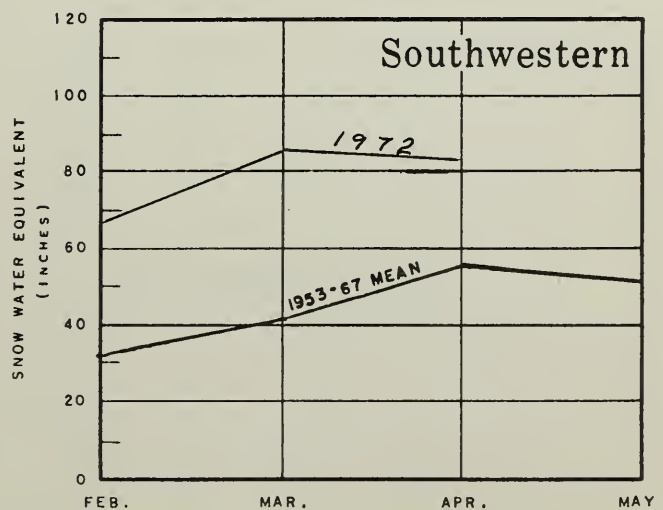
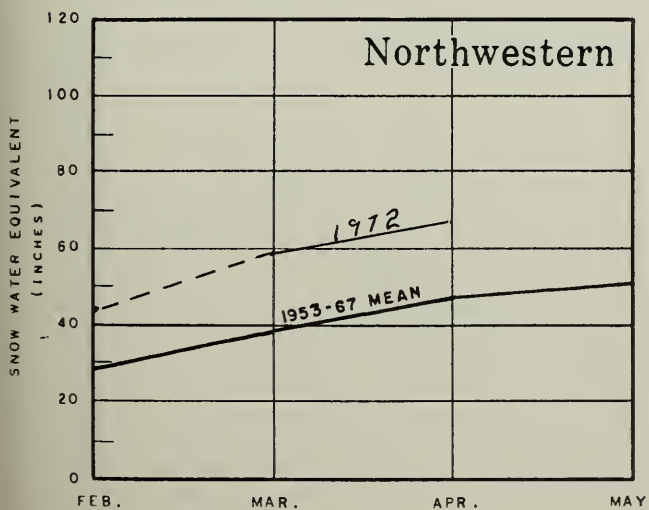
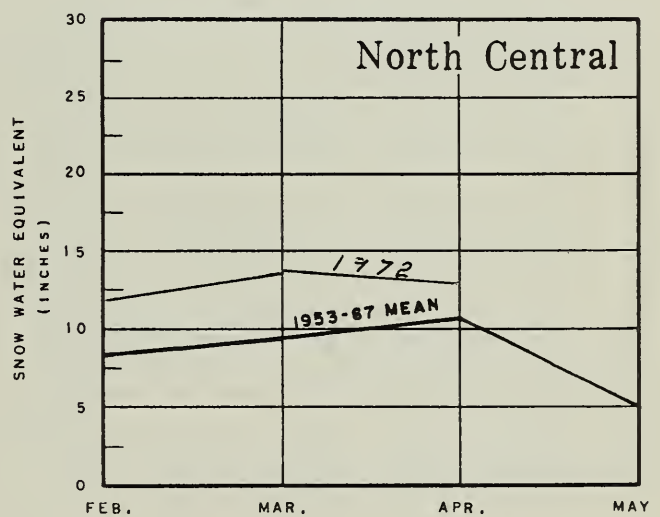
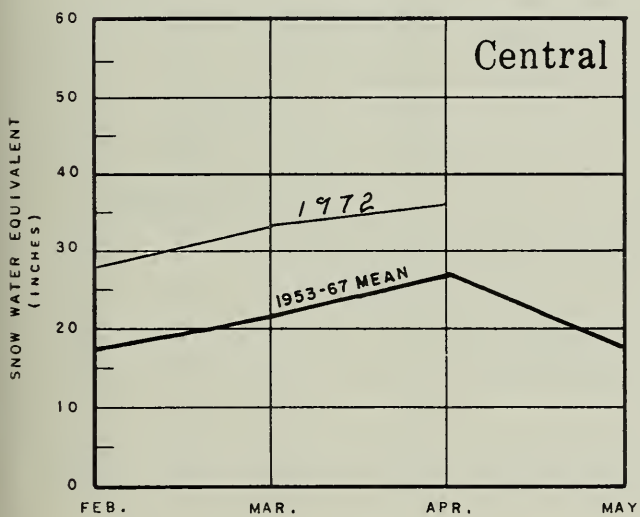
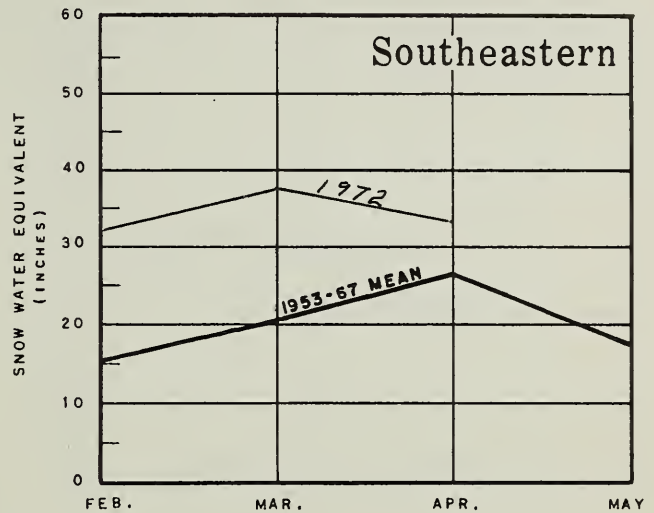
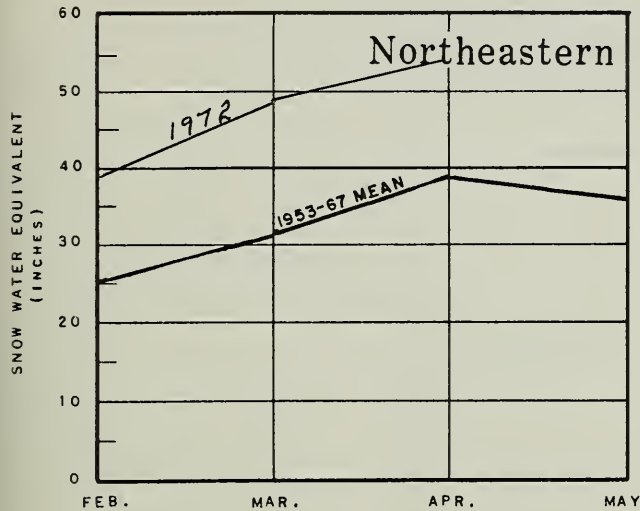
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and National Weather Service.

2/ - Departure from 15-year (1953-67) drainage division average.

WASHINGTON SNOW COVER

1972

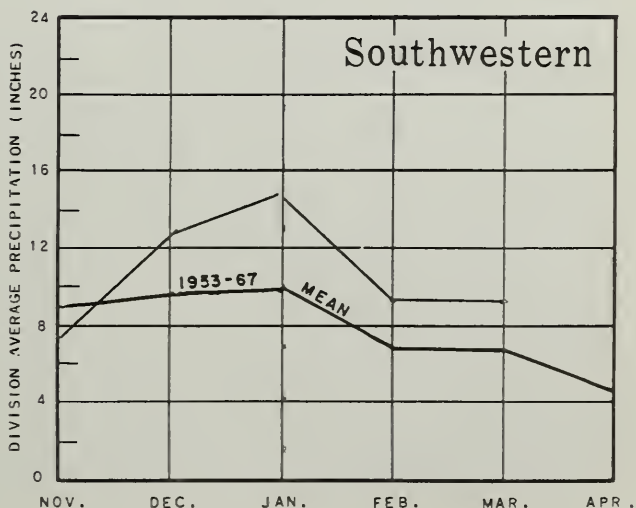
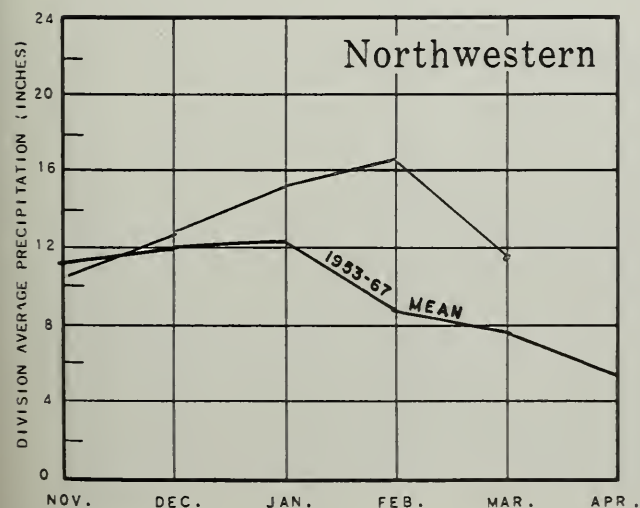
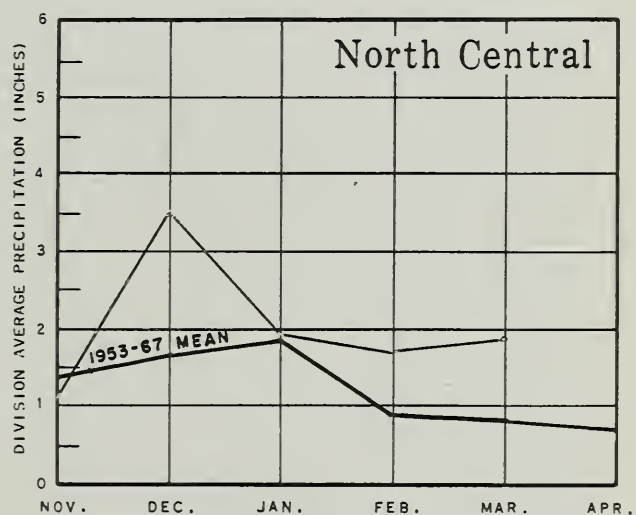
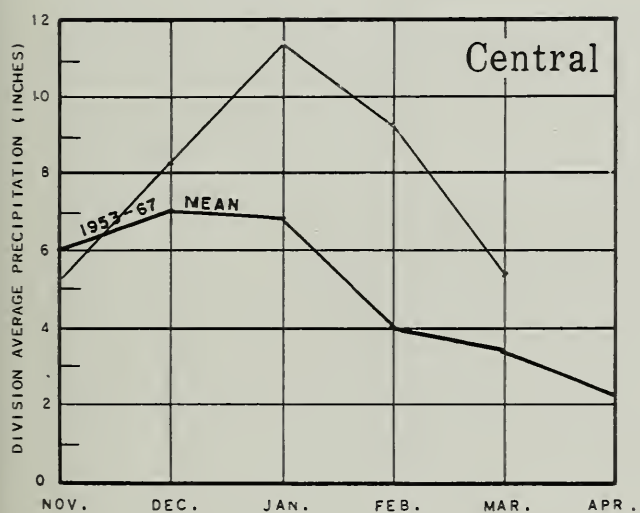
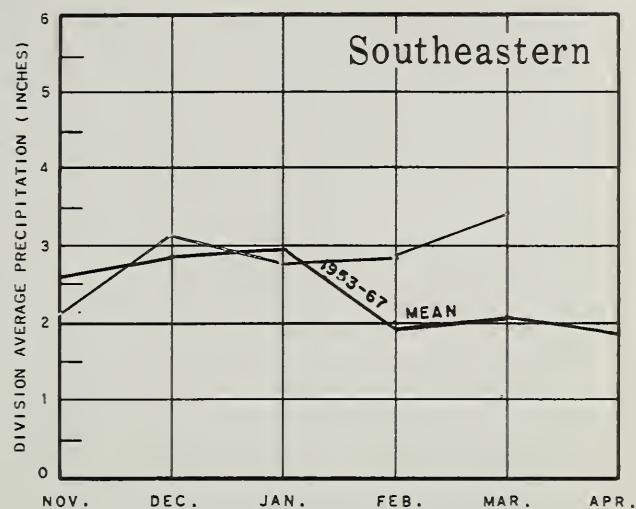
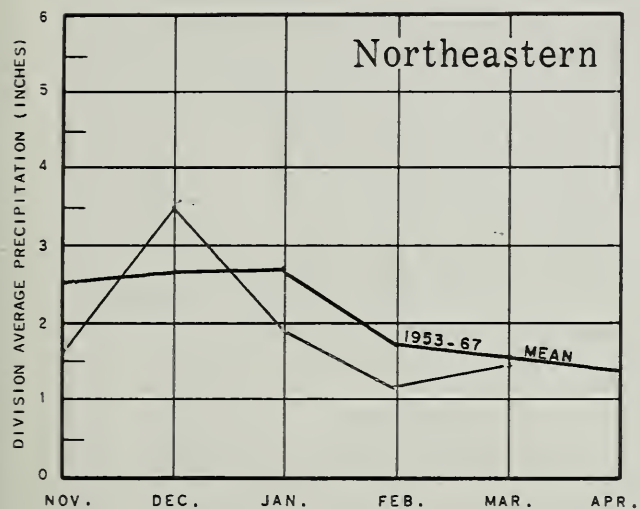
DRAINAGE AREAS



WASHINGTON VALLEY PRECIPITATION

1971 - 1972

DRAINAGE AREAS



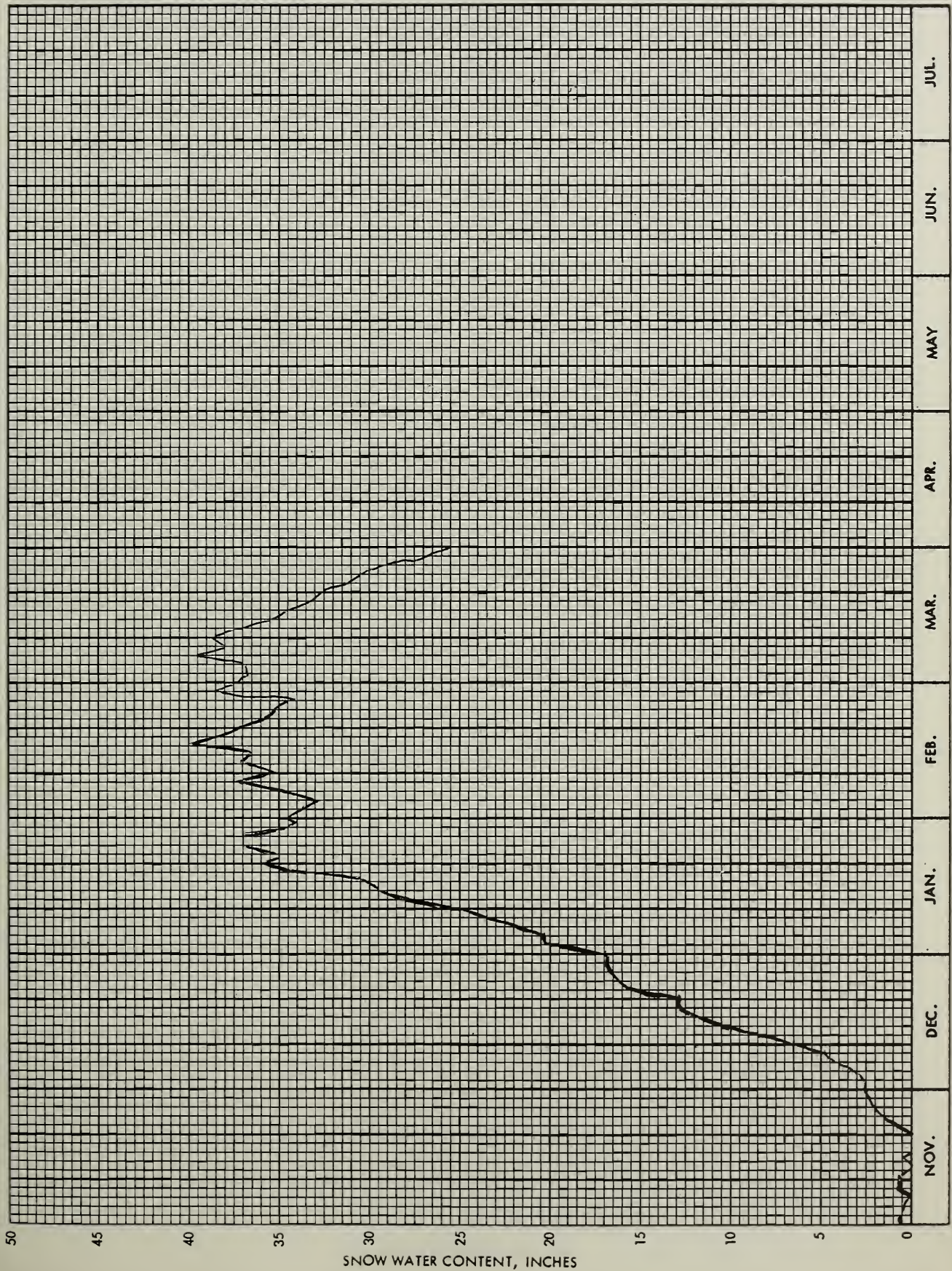
Cougar Mountain - FS
SNOW PILLOW DATA

April 1, 1972

AS OF

Sec. 21 T. 21N R. 9E No. 21B42SP Drainage: Green River

Lat. 47° 17' Long. 121° 40' Elev. 3200'

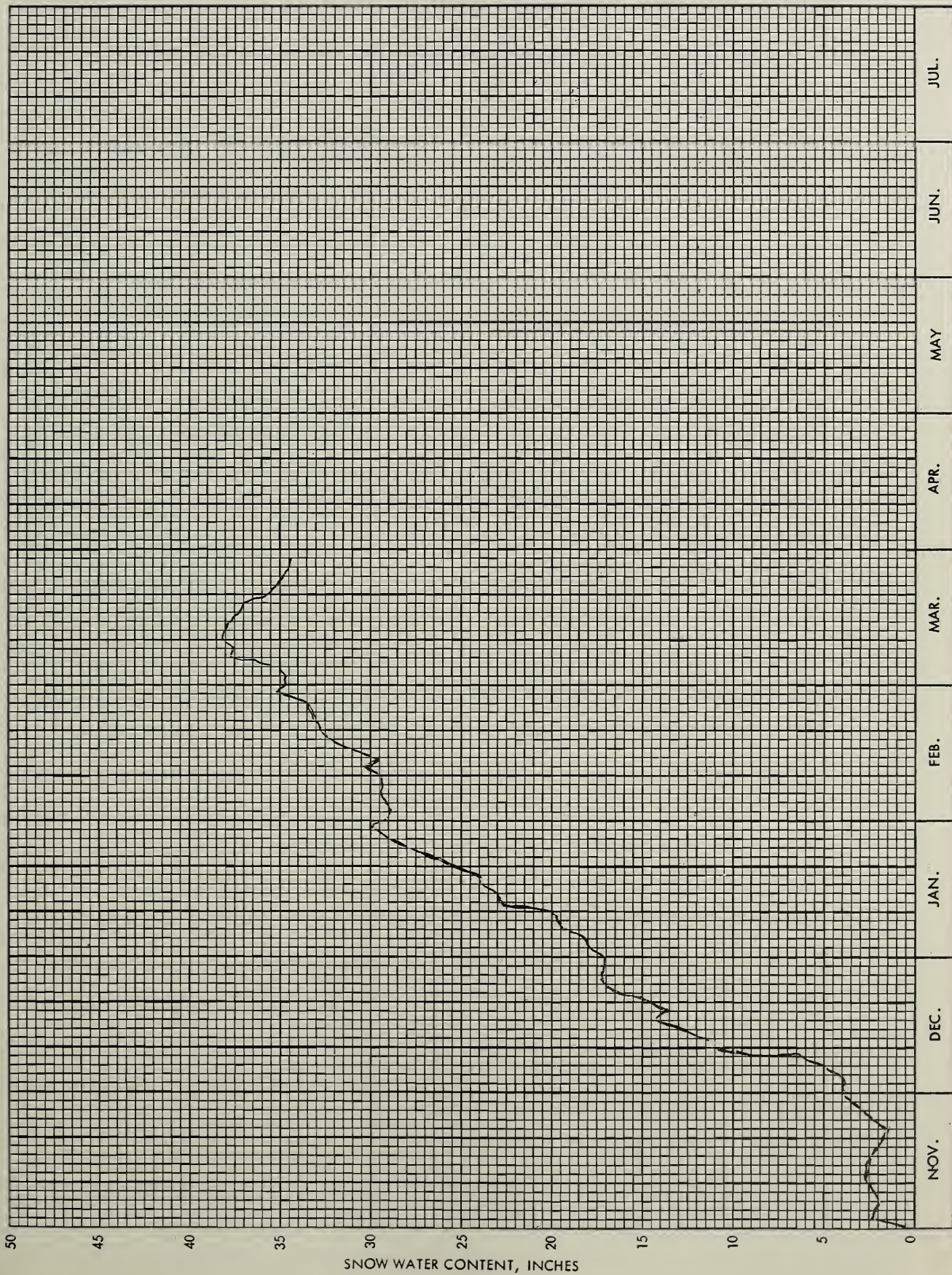


Berne-Mill Creek
SNOW PILLOW DATA

AS OF April 1, 1972

Sec. 13 T. 26N R. 14E No. 21B41SP Drainage: Wenatchee R.

Lat. 47° 45' Long. 121° 42' Elev. 3240'

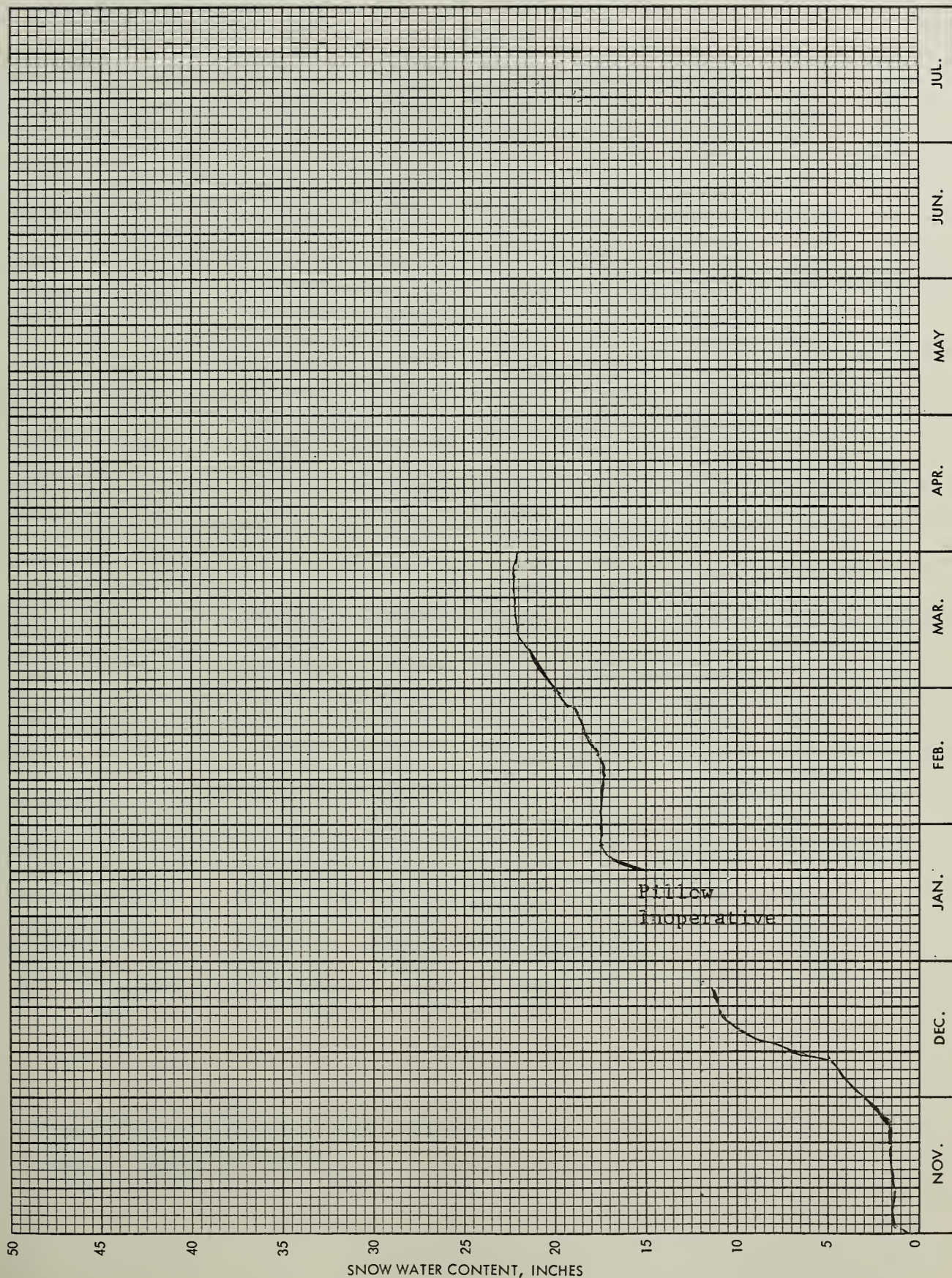


Trough No. 2

SNOW PILLOW DATA

AS OF April 1, 1972

Sec. 10 T. 20N R. 20E No. 20B25SP Drainage: Wenatchee
Lat. 47° 14' Long. 120° 19' Elev. 5310'



APPENDIX 1
SNOW DATA MARCH 1 to APRIL 1, 1972

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average ✓

U P P E R C O L U M B I A D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	3/30	146	68.9	57.5	49.6
Baree Midway	15B16	4600	3/30	113	52.3	41.8	38.8
Baree Trail	15B15	3800	3/31	20	8.8	16.2	7.8
Benton Meadow	16A2	2344	3/29	0	0.0	6.5	3.2
Benton Spring	16A3	4900	4/3	41	18.2	22.2	20.8
Boyer Mountain	17A2	5250	3/29	62	26.0	36.0	27.9
Brush Creek	14A4	5000	3/28	41	14.5	13.2	13.1
Bunchgrass Meadow	17A1	5000	3/28	75	32.8	32.4	31.8
#Chewelah	17A4	4925	4/1	34	13.1	19.4	19.2*
Heart Lake Trail	14C10	4800	3/28	87	39.4	33.2	23.0
Hoodo Basin	15C10	4800	3/28	176	80.8	67.8	54.5
Hoodo Creek	15C1	6200	3/28	175	78.3	64.2	50.6
Lookout	15B2	5250	3/30	119	54.5	49.8	38.4
Mosquito Ridge	16A4A	5100	3/27	105	45.6	46.6	40.2*
Nelson	Canada	3050	3/27	42	16.7	20.6	15.8**
Schweitzer Bowl	16A6	4500	3/30	69	31.8	38.8	--
Schweitzer Ridge	16A5	6100	3/30	118	51.8	55.5	--
Smith Creek	16A1	4800	4/3	119	56.7	64.6	50.1
Winchester Creek	17A3	2970	3/28	19	7.4	18.4	11.3*

KETTLE RIVER

Barnes Creek	Canada	5500	3/29	71	25.5	23.1	212.**
Big White Mountain	Canada	5500	3/26	69	23.7	20.9	19.4**
Boulder Road	18A2	1450	3/29	0	0.0	7.8	1.8*
Butte Creek	18A3	4070	3/29	23	6.9	11.7	9.9*
Cabin Creek	18A8	3170	3/29	19	6.8	11.3	8.9*
Carmi	Canada	4100	3/26	26	9.0	8.6	6.1**
Farron	Canada	4000	3/27	36	13.2	19.0	13.4**
Goat Creek	18A4	3595	3/29	5	1.7	9.2	6.5*
Lower Trapping Cr.	Canada	3050	3/26	18	6.2	6.4	3.3**
#Monashee Pass	Canada	4500	3/29	49	17.8	15.5	14.1**
Old Glory Mountain	Canada	7000	3/26	95	33.6	30.2	27.9**
Snow Caps Creek	18A5	2150	3/29	0	0.0	6.5	1.9*
Snow Caps Trail	18A6	2720	3/29	7	2.5	9.2	5.7*
Summit G. S.	18A7	4600	Not Measured			9.2	9.6*
Upper Trapping Cr.	Canada	5500	3/26	37	12.6	11.4	9.1**

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	NO.	Elevation				Last Year	Average ✓

COLVILLE RIVER

Baird	17A6	3215	4/1	0	0.0	8.0	6.4*
Carlson	18A9	2885	4/1	0	0.0	6.0	2.7*
Chewelah	17A4	4925	4/1	34	13.1	19.4	19.2*
Stranger Mountain	17A5	4990	4/1	18	6.8	22.3	14.3*
Togo	18A10	3370	4/1	23	10.4	20.8	11.2*

SPOKANE RIVER

Above Burke	15B8	4100	3/27	85	35.6	34.0	25.0
Above Roland	15B7	4350	3/30	114	52.8	45.1	34.8*
Below Roland	15B6	3770	3/30	47	21.1	21.4	17.0*
Copper Ridge	16B2	4800	3/30	78	38.6	31.5	31.1
Forty-nine Meadows	15B3	5000	3/31	98	42.3	46.0	36.1
Fourth of July Summit	16B3	3100	3/16	24	9.4	11.2	--
			3/30	14	5.4	10.8	11.2*
Granite Peak	15B13A	6000	3/31	171	71.6	64.4	51.2*
Kellogg Peak	16B5A	5560	3/30	107	50.2	46.3	33.5*
#Lookout	15B2	5250	3/30	119	54.5	49.8	38.4
Lost Lake	15B14A	6000	3/31	224	98.6	--	66.2*
Lower Sands Creek	16B1	3400	3/30	68	27.9	24.6	21.0
Medicine Ridge	15B4A	6150	3/31	160	67.0	55.1	--
#Mosquito Ridge	16A4A	5110	3/27	105	45.6	46.6	40.2
Outlaw Creek	15B12A	3650	3/31	52	18.5	26.1	17.8*
Roland Summit	15B5A	5200	3/30	142	67.1	53.8	41.2*
Sherwin	16C1	3200	3/30	55	21.7	14.7	16.6*
Sunset	15B9A	5600	3/27	124	53.8	48.2	35.6*

SANPOIL RIVER

Sherman Creek Pass	18A1	5350	3/29	38	12.7	15.6	15.2
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OKANOGAN RIVER

Aberdeen Lake	Canada	4300	3/28	26	6.8	7.0	6.1**
Blackwall Peak	Canada	6250	Late Report			47.5	34.4**
Bouleau Creek	Canada	5000	3/29	44	18.3	15.8	12.0**
Bouleau Lake	Canada	4500	3/26	60	18.3	18.0	--
Brookmere	Canada	3200	3/26	44	15.7	14.8	9.6**
Carrs Landing Lower	Canada	2250	3/30	0	0.0	1.6	0.0**
Carrs Landing Upper	Canada	3200	3/30	12	4.0	5.3	3.2**
Brenda Mine	Canada	4800	3/28	56	20.9	17.0	12.5**

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average ✓

OKANOGAN RIVER (Cont.)

Clark	19A8a	7000	Late Report			29.9	23.1*
Enderby	Canada	6250	3/27	136	40.5	38.1	37.3**
Hamilton Hill	Canada	4900	3/29	76	33.5	19.3	14.8**
#Harts Pass	20A5A	6500	3/28	161	67.9	61.1	46.6
#Horseshoe Basin +	19A5a	7000	3/30	70	29.4	24.3	13.5*
Isintok Lake	Canada	5510	3/25	49	16.6	9.5	7.1**
Lost Horse Mountain	Canada	6300	3/27	61	21.0	12.4	8.0**
#Loup Loup	19A7	4650	3/29	31	12.0	13.3	8.7*
Lower Esperon Creek	Canada	4270	3/25	45	15.5	16.3	12.9**
McCulloch	Canada	4200	3/26	26	8.4	8.0	6.6**
Middle Esperon Creek	Canada	4580	3/25	55	19.2	21.8	15.5**
Missezula Mountain	Canada	5100	Late Report			14.0	8.3**
Mission Creek	Canada	6000	3/28	75	26.2	25.1	20.0**
Monashee Pass	Canada	4500	3/29	49	17.8	15.5	14.1**
Mount Kobau	Canada	5950	3/30	50	17.4	16.8	13.5**
Muckamuck +	19A9a	6390	Late Report			21.1	17.5*
Mutton Creek No. 1	19A1	5700	3/29	63	24.9	18.4	14.1
Mutton Creek No. 2	19A4	6000	3/30	62	23.0	20.6	15.1
New Copper Mountain	Canada	4300	3/25	30	11.8	10.6	4.9**
New Penticton Res.	Canada	6200	3/29	44	14.0	9.9	--
Nickel Plate Mtn.	Canada	6200	3/27	48	15.9	12.1	7.7**
Paysayten +	20A28a	4300	3/30	66	27.7	25.8	14.9**
Postill Lake	Canada	4500	3/29	31	11.2	11.6	8.8**
#Quartette Lake	Canada	4000	3/25	58	23.4	18.9	15.1
Rusty Creek	19A3	4000	3/30	20	8.1	8.8	7.0
Salmon Meadows	19A2	4500	3/30	36	12.4	14.2	10.6
Silver Star Mountain	Canada	6050	3/26	102	41.0	34.8	26.8**
Starvation Mountain +	19A10a	6750	Late Report			23.5	22.7*
Summerland Reservoir	Canada	4200	3/26	45	15.3	13.5	9.0
Touts Coulee	19A6	2845	3/30	5	1.9	4.4	0.7*
Trout Creek	Canada	4700	3/26	43	15.6	10.1	7.2**
Upper Esperon Creek	Canada	5290	3/25	65	22.0	26.5	20.3**
White Rocks Mountain	Canada	6000	3/29	81	33.6	34.1	22.2**
Vaseux Creek	Canada	4600	3/26	30	9.4	9.2	--

METHOW RIVER

Billy Goat Pass +	21A10a	6409	Marker buried			53.2	34.4*
Dollar Watch +	20A29a	7000	3/30	114	47.9	36.5	27.6*
Harts Pass	20A5A	6500	3/28	161	67.9	61.1	46.6
Horseshoe Basin +	19A5a	7000	3/30	70	29.4	24.3	13.5*
Loup Loup	19A7	4650	3/29	31	12.0	13.3	8.7*

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average ✓

METHOW RIVER (Cont.)

#Mutton Creek No. 1	19A1	5700	3/29	63	24.9	18.4	14.1
#Mutton Creek No. 2	19A4	6000	3/30	62	23.0	20.6	15.1
#Rusty Creek	19A3	4000	3/30	20	8.1	8.8	7.0
#Salmon Meadows	19A2	4500	3/30	36	12.4	14.2	10.6
#War Creek Pass +	20A31a	6500	Marker buried			57.3	--

CHELAN LAKE BASIN

Lyman Lake	20A23A	5900	3/22	223	106.3	82.4	58.5
Park Creek Ridge	20A12A	4600	3/28	153	65.4	66.8	46.5
Rainy Pass	20A9	4780	3/28	148	65.6	57.6	41.2
Safety Harbor	20A30A	6300	3/27	116	49.5	42.7	29.4*
War Creek Pass +	20A31a	6500	Marker buried			57.3	43.1*

ENTIAT RIVER

Brief	20B19	1600	3/28	16	7.1	11.7	2.5*
Entiat Meadows +	20A33a	4800	4/1	147	67.6	64.9	50.6
Entiat River Trail +	20A34a	3150	4/1	58	27.8	38.0	22.7*
Four Mile Ridge +	20B27a		4/1	120	55.2	New Marker	
Fox Camp +	20A36a	6510	Marker buried		83.7	67.9	61.9*
Pope Ridge	20B20	4300	4/1	55	26.0	27.8	20.2*
Pugh Ridge +	20A32a	6400	4/1	131	60.3	48.5	40.6*
Shady Pass	20A37	5000	4/1	116	52.8	38.5	--
Snow Brushy +	20A35a	3850	4/1	111	51.0	58.6	43.9*
Tommy Creek +	20B21a	5300	4/1	84	38.6	34.3	28.2*

WENATCHEE RIVER

Berne-Mill Creek	21B23	2925	3/28	97	46.0	45.6	27.5*
Berne-Mill Creek New	21B41SP	3240	3/28	69	30.8	40.9	--
Blewett Pass No. 2	20B2	4270	3/29	69	34.3	24.8	16.1
Chiwaukum G. S.	20B16	1810	3/29	48	20.6	19.4	9.6*
#Fish Lake	21B4	3371	3/28	120	59.4	56.8	35.4
Lake Wenatchee	20B5	1970	3/28	61	24.1	24.0	11.1*
Leavenworth R. S.	20B17	1127	3/15	Not Measured.		6.2	--
			3/31	4	2.0	3.2	--
#Lyman Lake	20A23A	5900	3/22	223	106.3	82.4	58.5
Merritt	20B18	2140	3/28	67	27.6	24.6	14.2*

Not located directly on this drainage

* Adjusted 1953-67 average

+ Snow water equivalent estimated from aerial stadia observation

APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average ^{1/}
<u>WENATCHEE RIVER (Cont.)</u>							
Stevens Pass	21B1	4070	3/15	175	85.1	67.9	49.7
			3/28	170	87.0	79.1	54.1
Stevens Pass S. Shed	21B45	3700	3/15	120	56.1	50.7	--
			3/28	117	56.0	57.2	--
<u>SQUILCHUCK CREEK</u>							
Beehive Springs	20B3	4400	3/31	19	9.9	9.8	7.7*
Scout-A-Vista	20B4	3400	3/31	22	10.5	11.3	6.4*
<u>STEMILT CREEK</u>							
Jump-Off	20B8	4450	3/29	25	12.6	11.2	7.3*
Stemilt Slide	20B6	5000	3/30	45	22.6	19.1	13.3*
Upper Wheeler	20B7	4400	3/30	24	13.1	13.6	8.3*
<u>COLOCKUM CREEK</u>							
Colockum Creek Upper	20B22	5300	3/29	42	21.5	18.5	--
Colockum Creek Lower	20B23	4300	3/29	26	13.0	13.0	--
<u>YAKIMA RIVER</u>							
#Ahtanum R. S.	21C11	3100	3/27	10	4.3	10.3	4.9*
Big Boulder Creek	21B9	3200	3/28	68	32.4	34.7	18.7
#Blewett Pass No. 2	20B2	4270	3/29	69	34.3	24.8	16.1
Bumping Lake	21C8	3450	3/15	56	22.6	29.0	16.9*
			3/31	49	20.5	29.5	16.8
Bumping Lake New	21C36	3400	3/15	70	28.9	31.5	19.9*
			3/31	63	26.6	34.0	17.2*
#Cayuse Pass	21C6	5300	3/27	272	128.2	135.3	91.2
Colockum Pass	20B9	5370	3/31	55	26.0	21.8	18.6*
Cooke Creek	20B10	4123	3/31	27	11.9	9.7	5.5*
#Corral Pass	21C13	6000	3/27	161	69.0	59.8	41.7*
Fish Lake	21B4	3371	3/28	120	59.4	56.8	35.4
Green Lake	21C10	6000	3/27	124	54.5	--	33.2*
Grouse Camp	20B11	5385	3/30	62	30.3	20.4	18.2*
High Creek	20B12	2930	3/30	25	11.2	10.8	0.9*
Lake Cle Elum	21B14M	2200	3/14	56	24.4	7.8	11.0*
			3/31	39	16.5	8.8	5.7
Lemah Creek +	21B47a	3327	3/28	123	59.0	--	--
Manashtash	20C1	3935	3/29	0	0.0	6.5	1.8*

Not located directly on this drainage

* Adjusted 1953-67 average

APPENDIX 6

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average ✓

YAKIMA RIVER (Cont.)

Morse Lake	21C17	5400	3/29	184	69.4	94.4	62.0*
Nanum	21B39	2340	3/30	32	14.6	14.5	8.0*
#Olallie Meadows	21B2	3625	3/29	158	81.7	81.0	51.3
#Satus Pass	20D1	4030	3/30	17	8.3	19.9	--
#Stampede Pass	21B10	3000	3/16	153	46.2	65.1	45.2
			3/30	149	46.7	67.5	48.8
Trail Creek	20B14	3360	3/31	0	0.0	0.0	--
Tunnel Avenue	21B8	2450	3/14	88	38.6	35.2	25.2*
			3/31	80	36.0	38.2	25.9
Van Epps Pass +	20B26a	5925	3/28	220	105.6	--	--
Walters Flat	20B15	3360	3/30	23	11.0	11.1	4.9*
Waptus Lake +	21B49a	3024	3/28	135	64.8	--	--
White Pass (E. Side)	21C28	4500	3/16	104	51.6	37.7	24.4*
			3/30	102	48.3	41.7	26.6*
White Pass (L. Lake)	21C27	4500	Not Measured			43.6	31.4*
			3/27	117	52.4	42.4	32.6*

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	3/27	10	4.3	10.3	4.9*
#Green Lake	21C10	6000	3/27	124	54.5	--	33.2*

L O W E R C O L U M B I A D R A I N A G EASOTIN CREEK

Spruce Springs	17C4	5700	3/29	79	35.8	22.7	--
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MILL CREEK

Homestead	17C1	4030	3/28	17	7.8	9.9	7.9*
Martin Springs	17C2	4400	3/28	43	19.5	16.6	14.5*
Tollgate	18D3M	5070	3/30	74	33.6	30.7	25.9

KLICKITAT RIVER

Satus Pass	20D1	4030	3/30	17	8.3	19.9	12.1*
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+ Snow water equivalent estimated from aerial stadia observation

Not located directly on this drainage

* Adjusted 1953-67 average

APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average ^{1/}

WHITE SALMON RIVER

Cultus Creek	21C12	4000	3/28	137	66.3	79.3	49.7
#Surprise Lakes	21C13A	4250	3/28	160	80.7	84.2	54.8

WIND RIVER

Old Man Pass	21D19	3100	3/28	58	25.2	44.4	20.7*
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LEWIS RIVER

Blue Lake +	21C22a	4800	3/28	260	130.0	130.0	84.2*
Bob's Trail	21C21	2200	3/29	50	22.1	33.0	13.8*
Calamity Ridge +	22D1a	2500	3/28	12	5.4	20.6	--
Council Pass +	21C18a	4200	3/28	131	64.2	71.3	42.6*
#Cultus Creek	21C12	4000	3/28	137	66.3	79.3	49.7
Divide Meadow +	21C29a	5600	3/28	204	102.0	89.8	60.0*
Grand Meadow	21C25	3500	3/28	83	38.2	46.0	29.0*
Lone Pine Shelter	21C26	3800	3/28	122	56.3	77.7	43.2*
Marble Mountain +	22C5a	3200	3/28	87	45.2	73.6	40.2*
#Mosquito Meadows	21C19	4100	3/28	128	58.6	80.3	47.4*
New Muddy River	22C6	1400	3/29	12	5.7	20.7	10.8*
Old Man Pass	21D19	3100	3/28	58	25.2	44.4	20.7*
Plains of Abraham +	22C1a	4400	3/28	180	90.0	108.9	70.2*
Smith Creek Road	22C4	2100	3/29	45	21.9	41.9	17.2*
Spencer Meadow +	21C20a	3400	3/29	62	29.8	51.0	25.6*
Surprise Lakes	21C13A	4250	3/28	160	80.7	84.2	54.8
Table Mountain +	21C24a	4200	3/28	136	66.6	81.0	49.2*
Timbered Peak +	21D18a	3000	3/28	24	10.8	36.6	23.7*

COWLITZ RIVER

Cayuse Pass	21C6	5300	3/27	272	128.2	135.3	91.2
Mosquito Meadows	21C19	4100	3/28	128	58.6	80.3	47.4
Ohanapecosh	21C32	2200	3/27	62	27.9	36.0	16.4
Packwood Lake	21C31	2870	3/27	64	27.9	29.1	13.5*
Pigtail Peak	21C33	5900	3/16	222	110.3	93.0	63.3*
			3/27	229	104.3	88.0	72.9*
#Plains of Abraham +	22C1a	4400	3/28	180	90.0	108.9	70.2
Potato Hill	21C14	4500	3/28	110	50.1	55.1	33.0*
#White Pass (E. Side)	21C28	4500	3/16	104	51.6	37.7	24.4*
			3/30	102	48.3	41.7	26.6*
#White Pass (L. Lake)	21C27	4500	3/27	117	52.4	42.5	32.6*
Willame Creek	21C30	3250	3/27	103	45.0	54.6	35.0*

+ Snow water equivalent estimated from aerial stadia observation

Not located directly on this drainage

* Adjusted 1953-67 average

APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average ✓

PUGET SOUND DRAINAGENISQUALLY RIVER

Ghost Forest	21C4	4550	3/28	176	84.5	73.0	50.1
Longmire	21C3	2760	3/28	51	21.8	29.7	10.6
New Paradise Park	21C35	5500	3/28	255	124.6	106.6	73.9*
Stem Glade	21C1	5050	3/28	249	116.1	104.7	74.4

WHITE RIVER

#Cayuse Pass	21C6	5300	3/27	272	128.2	135.3	91.2
Corral Pass	21C13	6000	3/27	161	69.0	59.8	41.7*
#Morse Lake	21C17	5400	3/29	184	69.4	94.4	62.0*
White River Campgr.	21C34	4000	3/22	68	32.6	--	--

GREEN RIVER

Airstrip	21B24	1800	3/27	6	2.5	3.6	--
Charley Creek	21B25	1200	3/27	0	0.0	0.0	--
Cougar Mountain SP	21B42SP	3200	3/30	50	25.6	37.0	--
Grass Mtn. No. 2	21B27	2900	3/27	77	35.4	45.2	26.1*
Grass Mtn. No. 3	21B28	2100	3/27	20	8.1	13.5	--
Lester Creek	21B29	3100	3/27	93	41.1	40.0	28.7*
Lynn Lake	21B50	4000	3/27	79	41.2	44.7	--
Sawmill Ridge	21B29	4700	3/27	140	66.6	60.8	46.0*
Snowshoe Butte SP	21B43SP	5000	3/29	200	96.2	77.0	--
Stampede Pass	21B10	3000	3/16	153	46.2	65.1	45.2
			3/30	149	46.7	67.5	48.8
Twin Camp	21B30	4100	3/27	78	37.2	37.2	31.0*

CEDAR RIVER

City Cabin	21B3	2390	3/28	58	26.2	36.9	18.3*
Mt. Gardner	21B21	3300	3/29	42	22.0	40.9	19.8*
Mt. Lindsay	21B16	2500	3/28	52	24.1	36.6	17.7*
Mt. Washington New	21B50	3000	Not Measured				
Rex River	21B17	2400	3/29	60	28.5	15.7	19.8*
S. F. Cedar	21B6	3000	3/28	79	35.5	41.0	24.8
Tinkham Creek	21B20	3400	3/28	82	36.9	46.7	23.2*

Not located directly on this drainage

* Adjusted 1953-67 average

APPENDIX 9

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average <input checked="" type="checkbox"/>

SNOQUALMIE RIVER

Alpine Meadow	21B48	3500	3/27	156	62.4	78.1	--
#Lake Elizabeth	21B19	2900	3/27	147	71.2	82.5	46.9*
Olallie Meadows	21B2	3625	3/29	158	81.7	81.0	51.3
S. F. Tolt	21B18	1900	3/27	0	0.0	3.7	--

SKYKOMISH RIVER

Lake Elizabeth	21B19	2900	3/27	147	71.2	82.5	46.9*
#Stevens Pass	21B1	4070	3/15	175	85.1	67.9	49.7
			3/28	170	87.0	79.1	54.1
#Stevens Pass S. Shed	21B45	3700	3/15	120	56.1	50.7	--
			3/28	117	56.0	57.2	--

SKAGIT RIVER

Beaver Creek Trail	21A4	2200	3/28	45	19.9	31.1	13.6
Beaver Pass	21A1	3680	3/28	111	49.7	50.6	35.6
Brown Top	21A28a	6000	3/28	213	97.2	84.6	--
Devils Park	20A4	5900	3/27	163	69.9	57.2	46.0
Freezeout Cr. Trail	20A1	3500	3/28	53	21.3	23.8	13.4
Granite Creek	21A29	3500	3/27	78	31.4	29.4	--
#Harts Pass	20A5A	6500	3/28	161	67.9	61.1	46.6
Klesilkwa	Canada	3700	3/29	69	31.1	25.4	15.0**
Lake Hozomeen	21A2	2600	3/28	35	13.4	20.4	10.4
#Lyman Lake +	20A23A	5900	3/22	223	106.3	82.4	58.5
Meadow Cabins	20A8	1900	3/27	37	14.4	11.4	7.5
New Lake Hozomeen	21A30	2600	3/28	43	17.5	25.8	--
New Tashme	Canada	2500	3/29	55	23.1	19.4	10.7**
Quartette Lake	Canada	4000	3/25	58	23.4	18.9	15.1**
#Rainy Pass	20A9	4780	3/27	148	65.6	57.6	41.2
Thunder Basin	20A7	4200	3/27	87	35.8	32.0	25.8

BAKER RIVER

Dock Butte	21A11A	3800	3/30	212	100.0	100.8	81.0*
Easy Pass	21A7A	5200	3/29	249	119.4	117.7	96.7*
Jasper Pass	21A6A	5400	3/29	251	112.3	126.0	103.6*
Komo Kulshan	21A17	800	3/29	38	15.8	16.8	--
Marten Lake	21A9A	3600	3/29	218	110.8	108.8	88.2*
Mount Blum +	21A18a	5800	3/29	180		--	--

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

APPENDIX 10

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average <input checked="" type="checkbox"/>

BAKER RIVER (Cont.)

#Panorama New	21A26	4300	3/15	197	98.3	87.2	--
			3/31	187	99.5	96.6	--
Rocky Creek	21A12A	2100	3/30	95	39.4	57.9	30.5*
Schreibers Meadow	21A10A	3400	3/29	168	84.5	94.2	73.3*
S. F. Thunder Creek	21A14A	2200	3/30	20	9.1	17.6	5.3*
Sulphur Creek	21A13	1600	3/30	55	22.7	32.6	13.7*
Three Mile Creek	21A8A	4500	3/30	6	2.4	6.3	--
Watson Lakes	21A8A	4500	3/29	214	103.5	103.2	78.2*

NOOKSACK RIVER

Bald Mountain +	21A19a	4400	3/30	181	92.3	70.8	--
Canyon +	21A20a	5100	Marker buried			86.0	--
Glacier Creek	21A23	3700	3/30	77	36.9	40.5	--
Panorama New	21A26	4300	3/15	197	98.3	87.2	--
			3/31	187	99.5	96.6	--
Twin Lakes +	21A21a	5200	Marker buried			94.0	--

OLYMPIC PENINSULADUNGENESS RIVER

Deer Park	23B4	5200	3/27	67	28.1	34.9	26.4*
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MORSE CREEK

Cox Valley	23B14	4500	3/31	107	45.3	67.2	--
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ELWHA RIVER

Hurricane	23B3	4500	3/31	70	29.9	39.8	29.3
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SKOKOMISH RIVER

Black & White	23B7	4200	3/28	116	52.2	73.0	47.9
Black & White Lakes	23B6	4700	3/28	166	84.4	98.8	67.3
Four Streams	23B10	3000	3/28	69	31.4	67.8	--
Home Sweet Home	23B5	5200	3/28	226	104.7	119.3	81.9
Sundown Pass	23B8	3900	Not Measured			104.0	66.5*

Not located directly on this drainage

* Adjusted 1953-67 average

+ Snow water equivalent estimated from aerial stadia observation

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests and Water Resources,
Water Resources Service, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
NOAA, National Weather Service
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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with the Snow Survey"*